

FIGURE 1

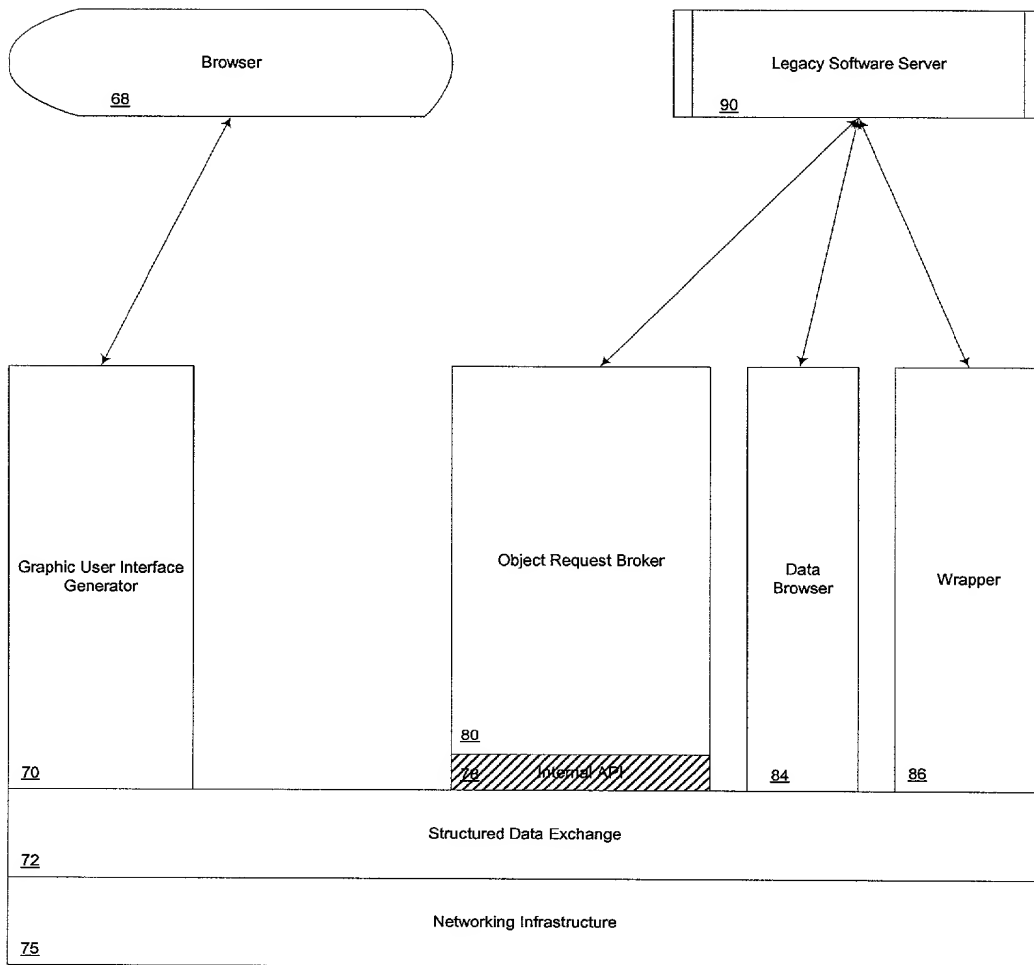


FIGURE 2



105

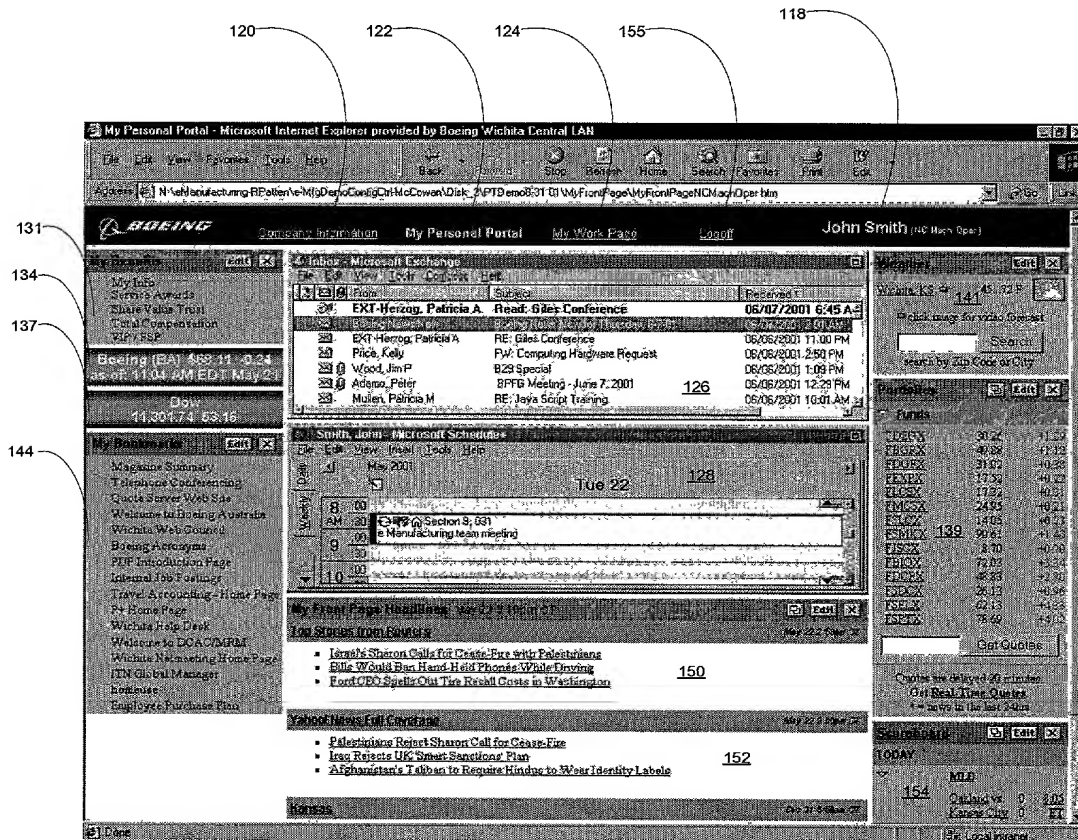


FIGURE 4

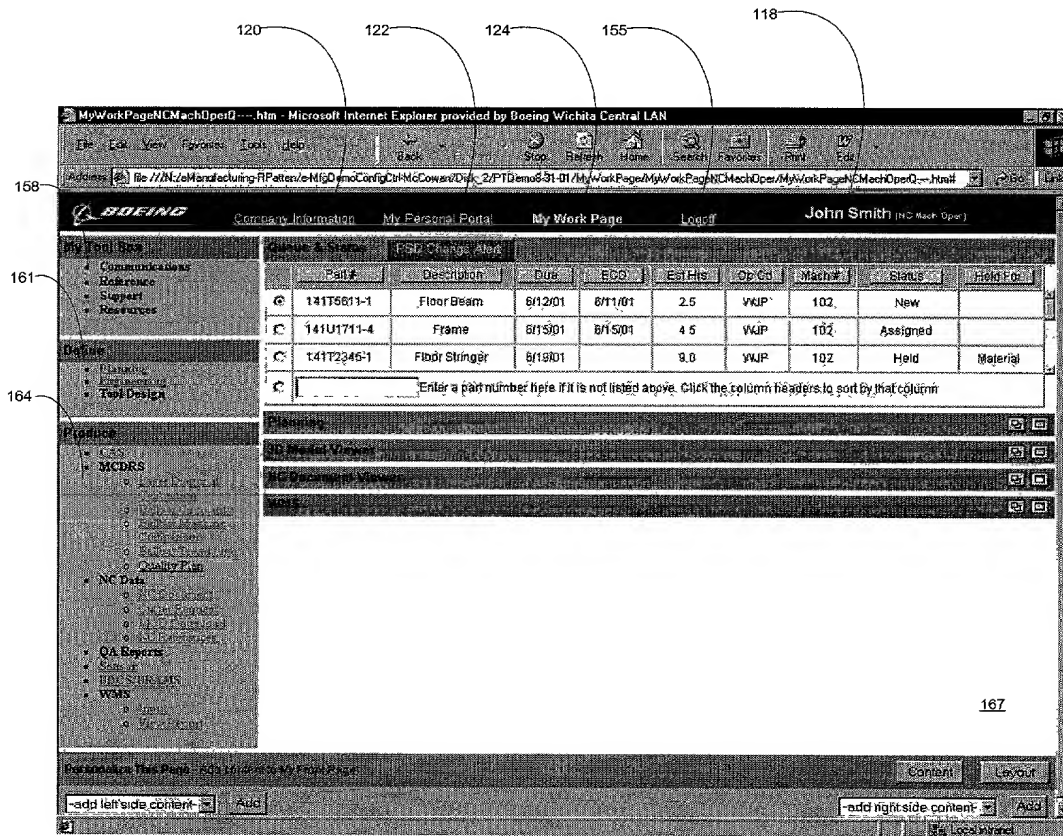


FIGURE 5

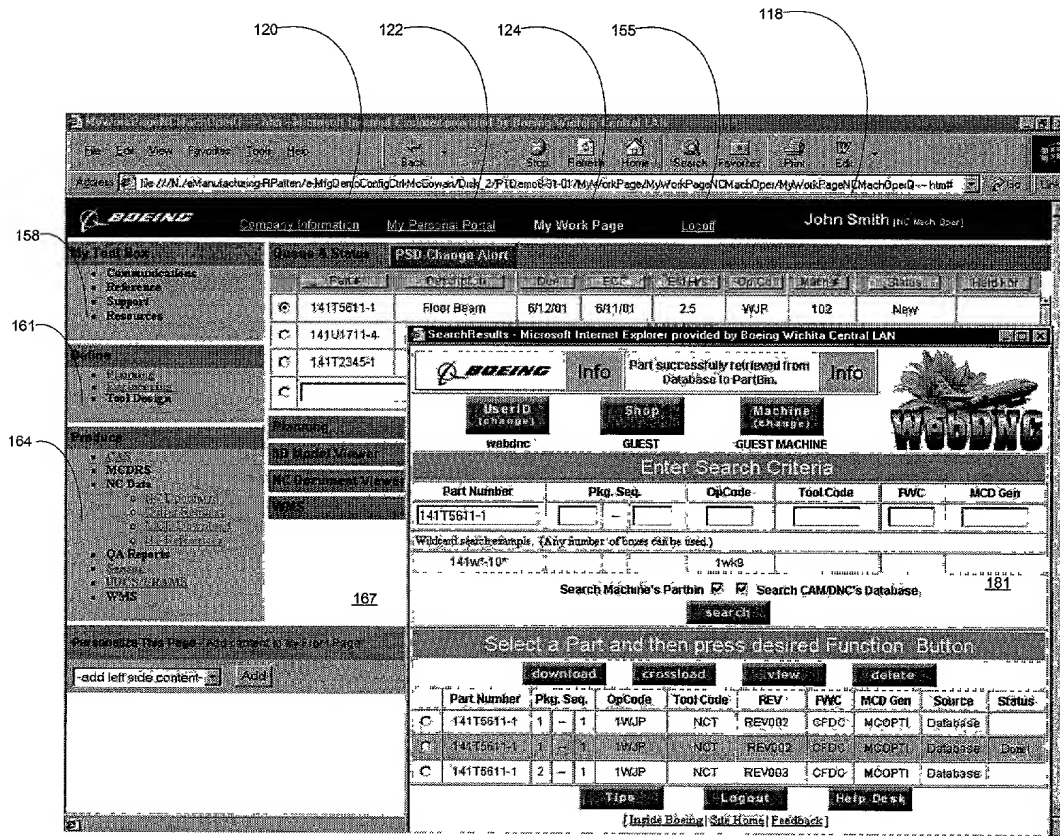


FIGURE 6

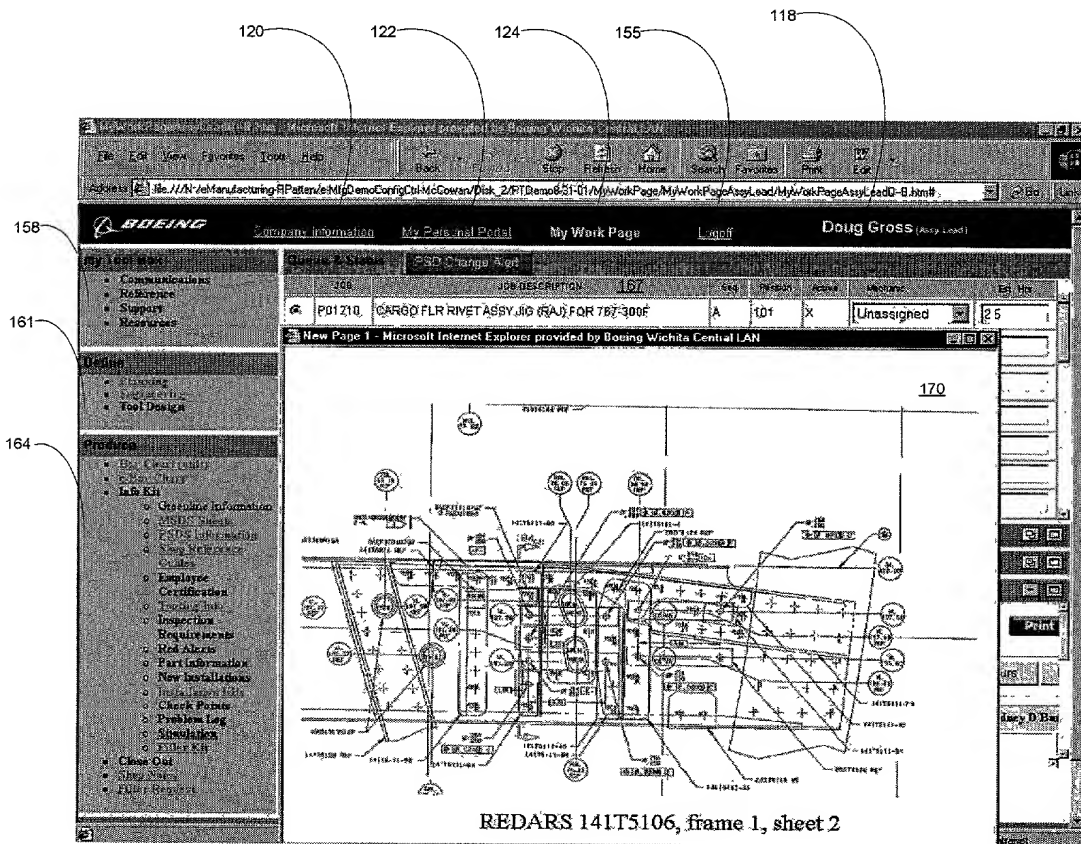


FIGURE 7

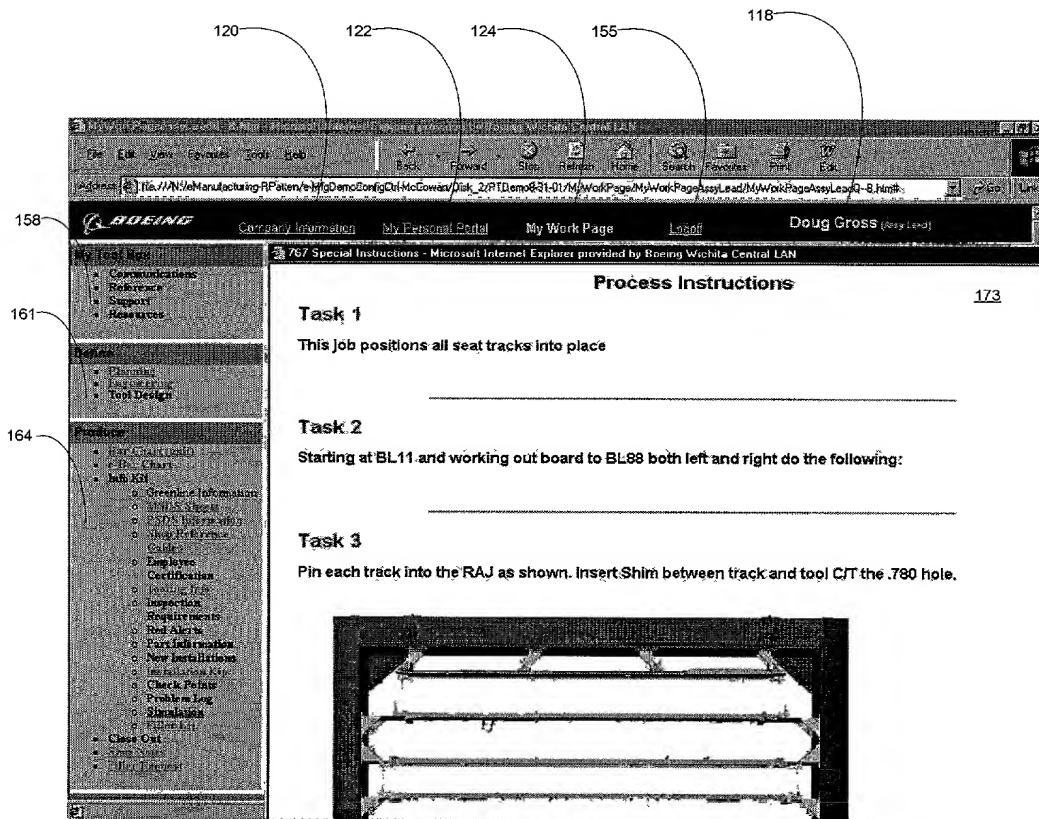


FIGURE 8



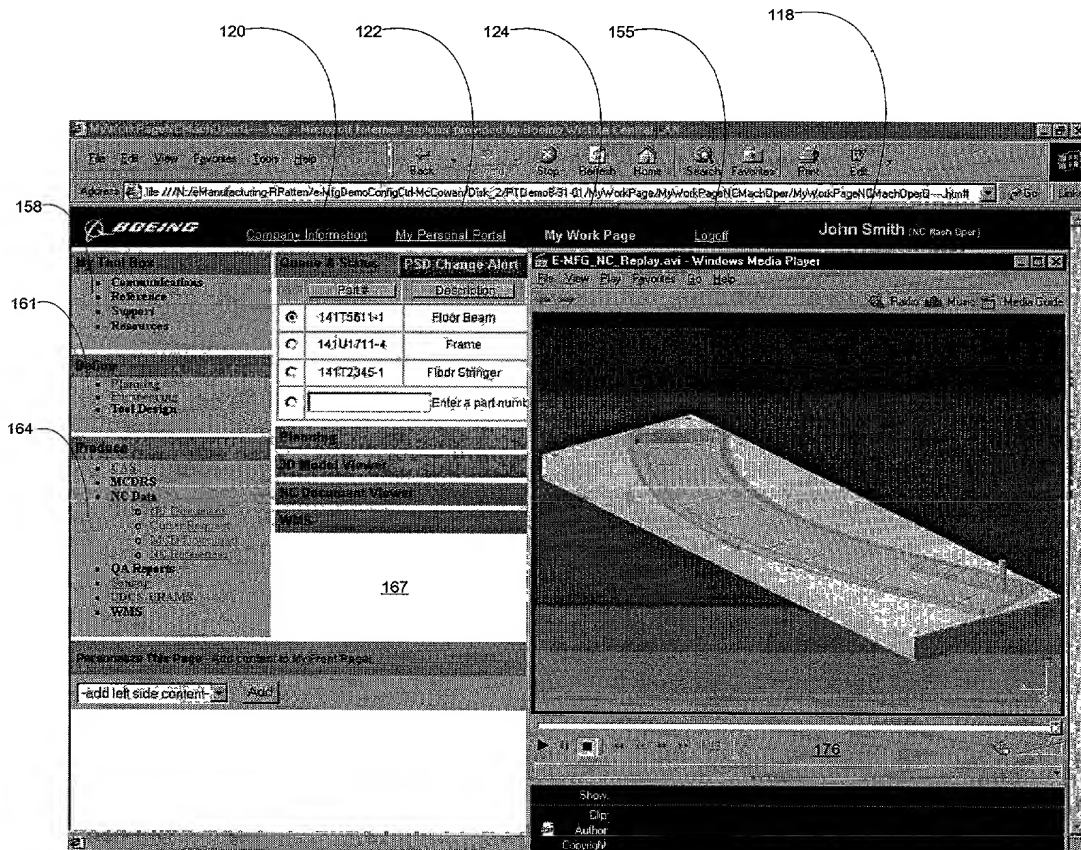


FIGURE 9



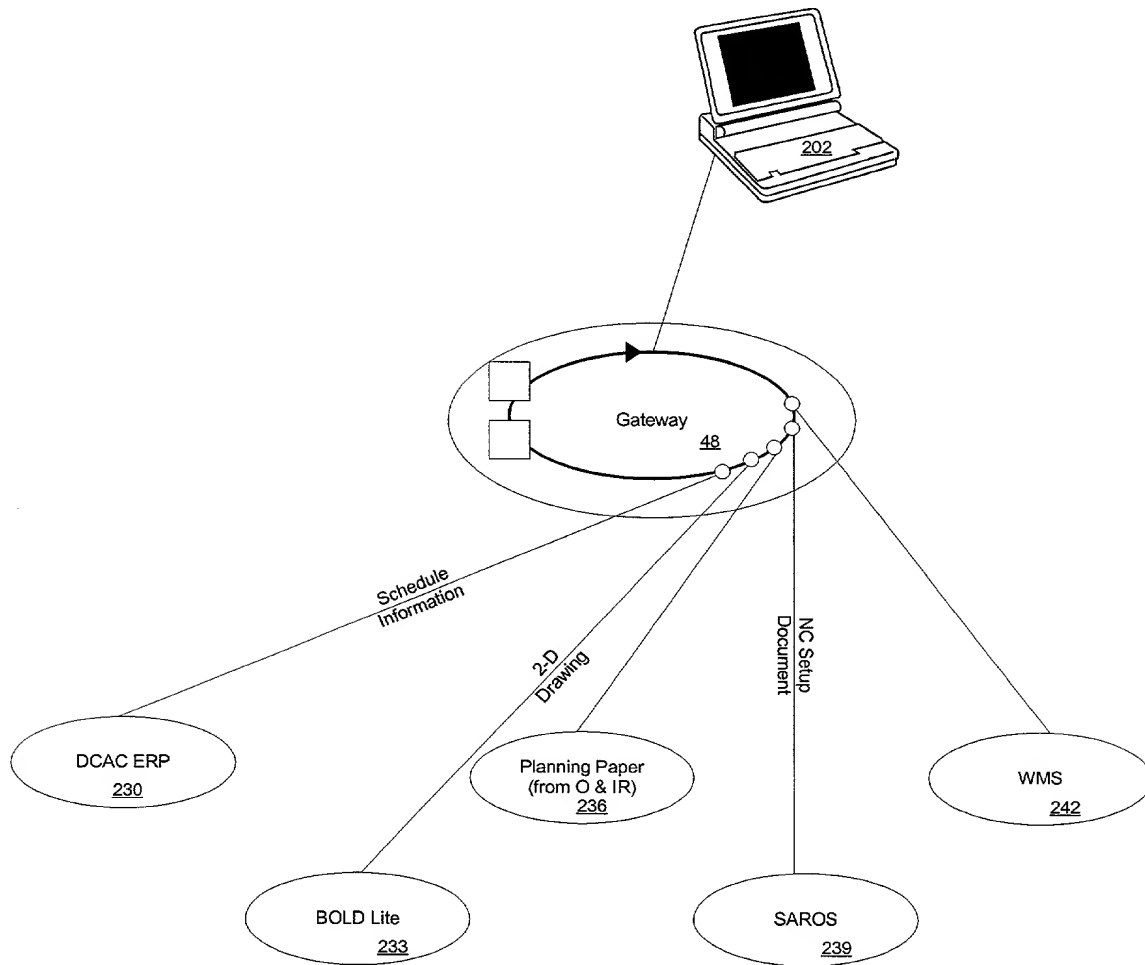


FIGURE 11

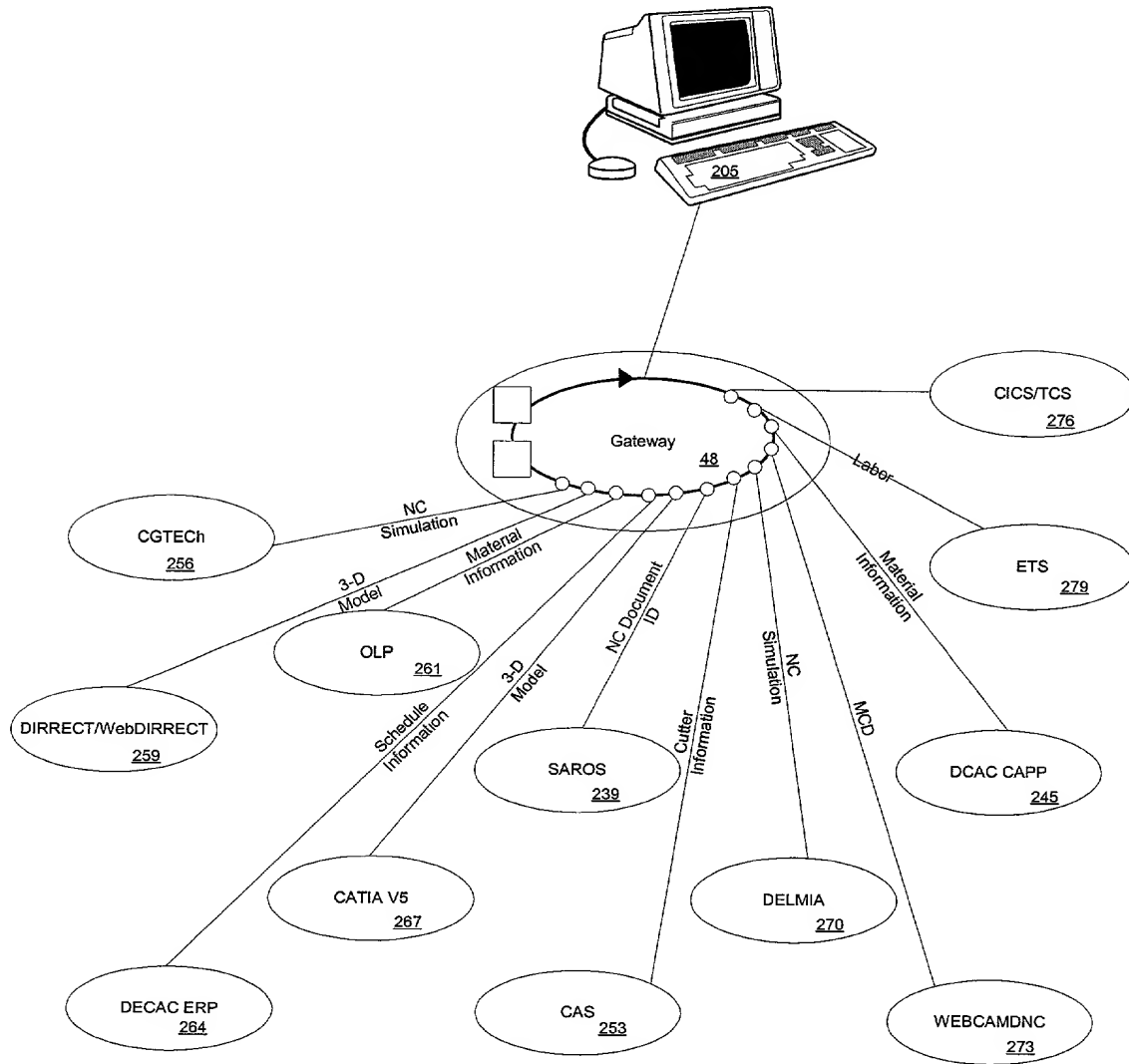
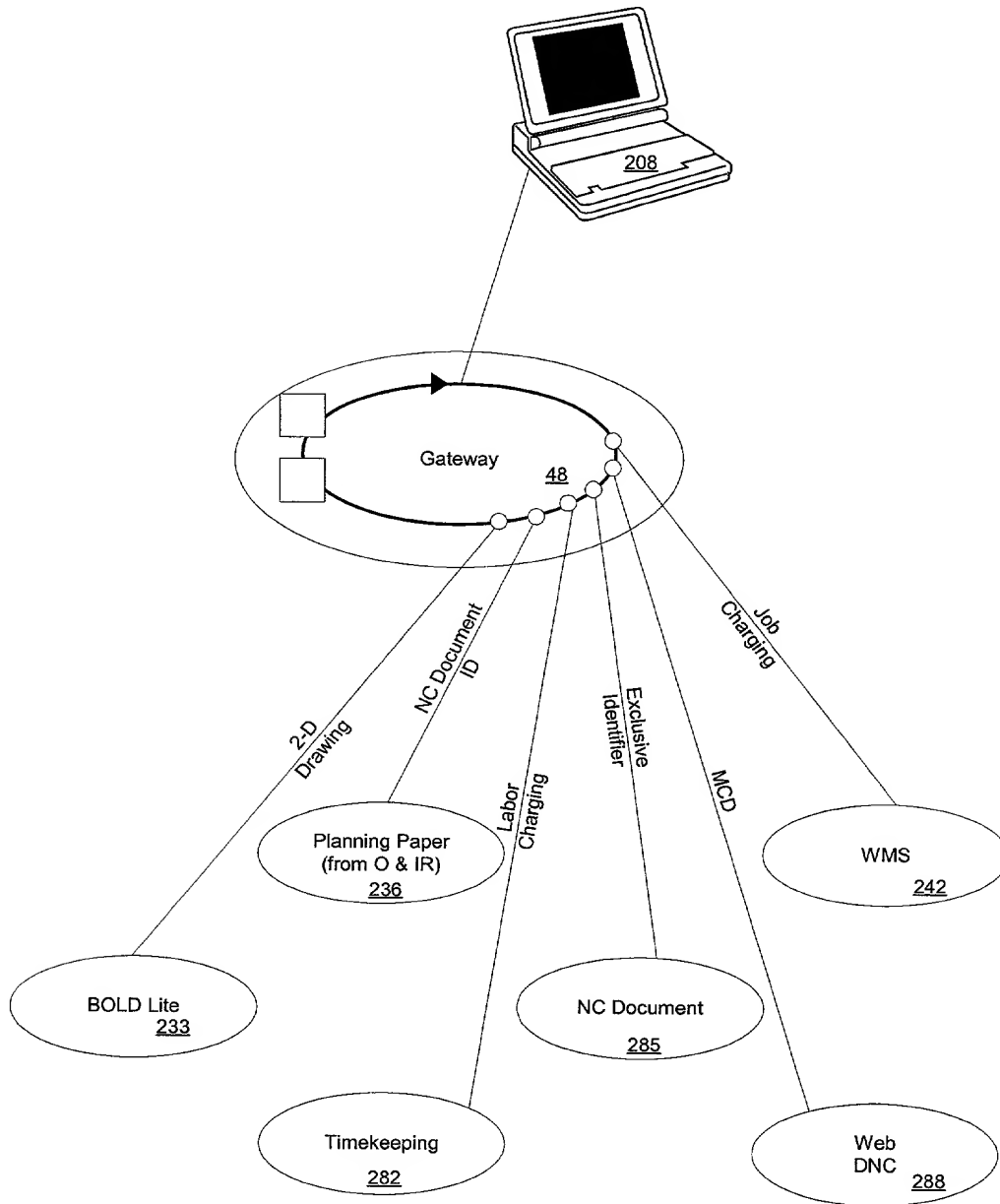


FIGURE 12



**FIGURE 13**

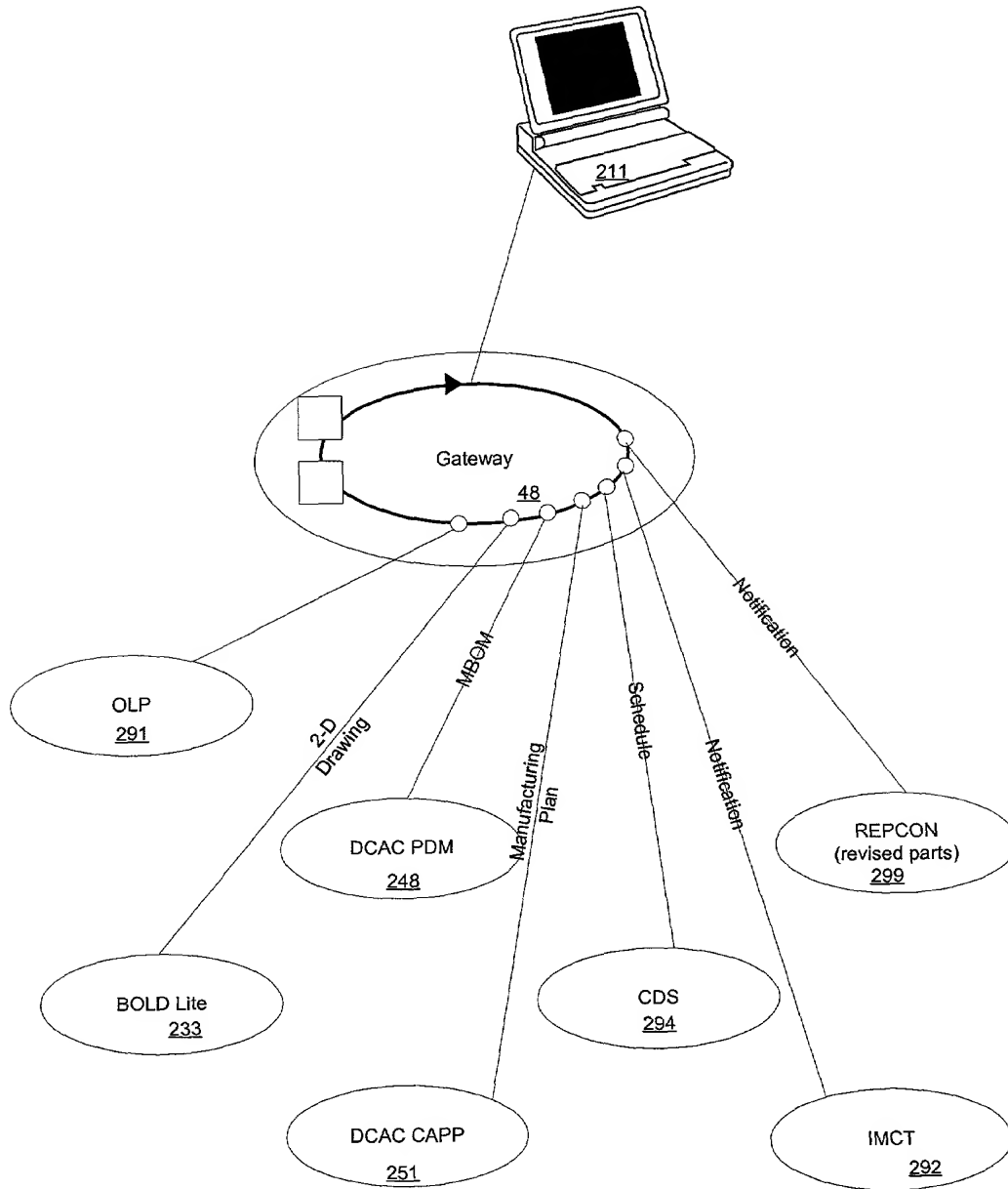
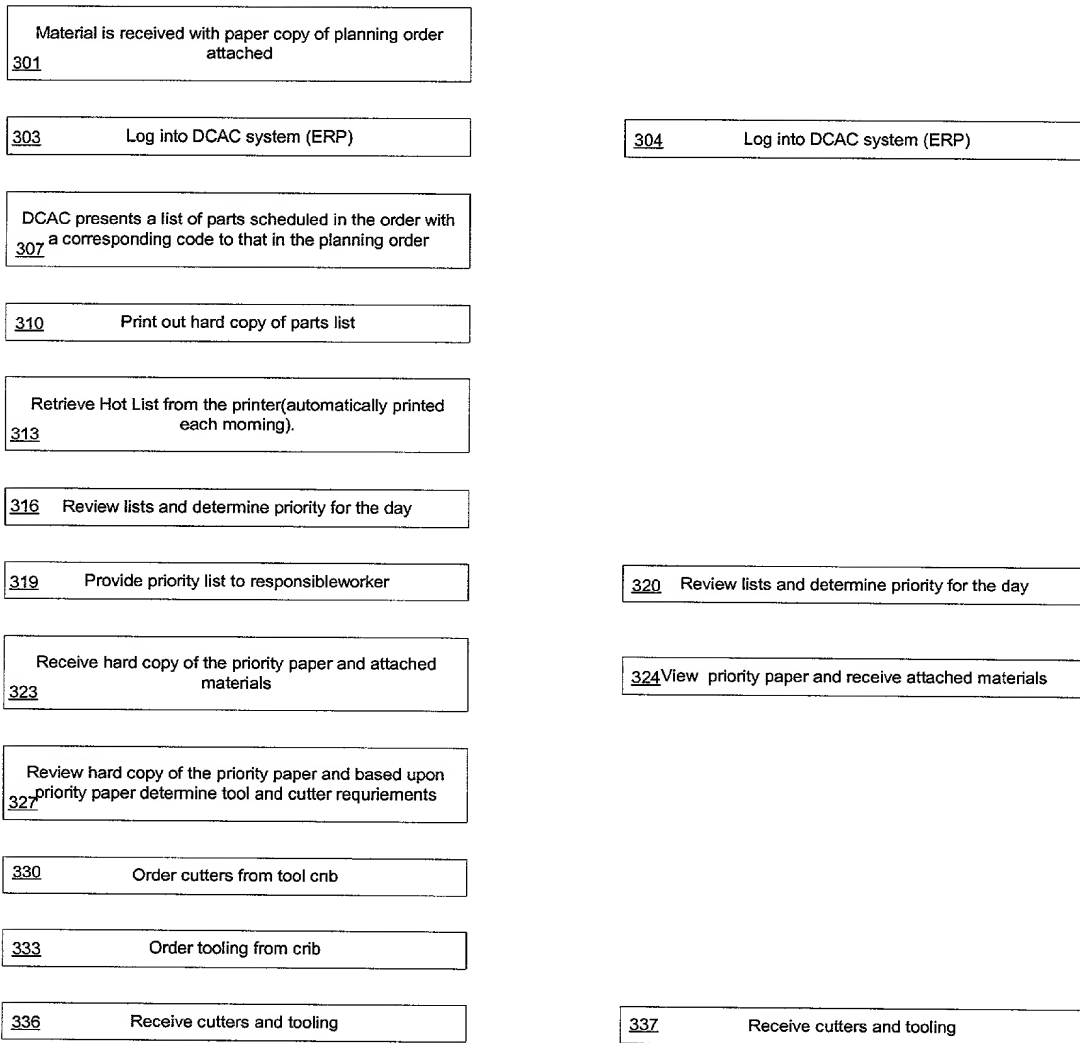


FIGURE 14



NC Part

FIGURE 15A

NC Part

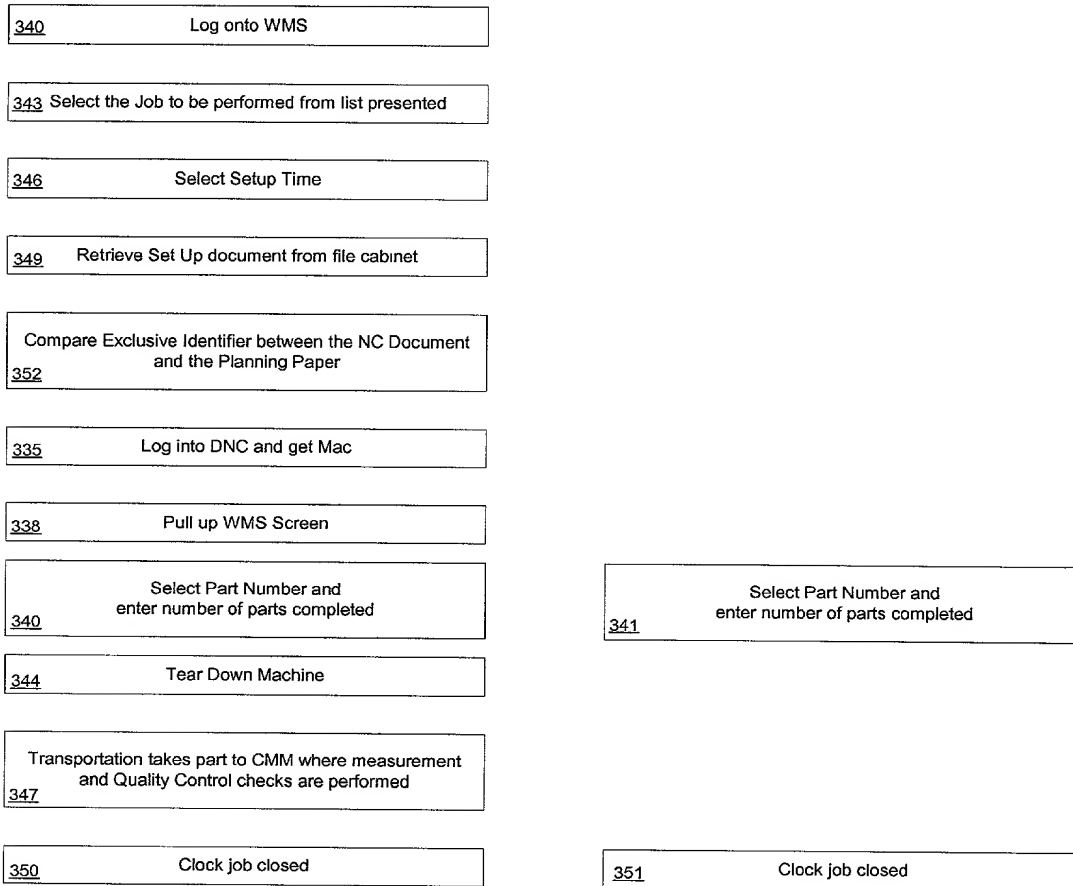
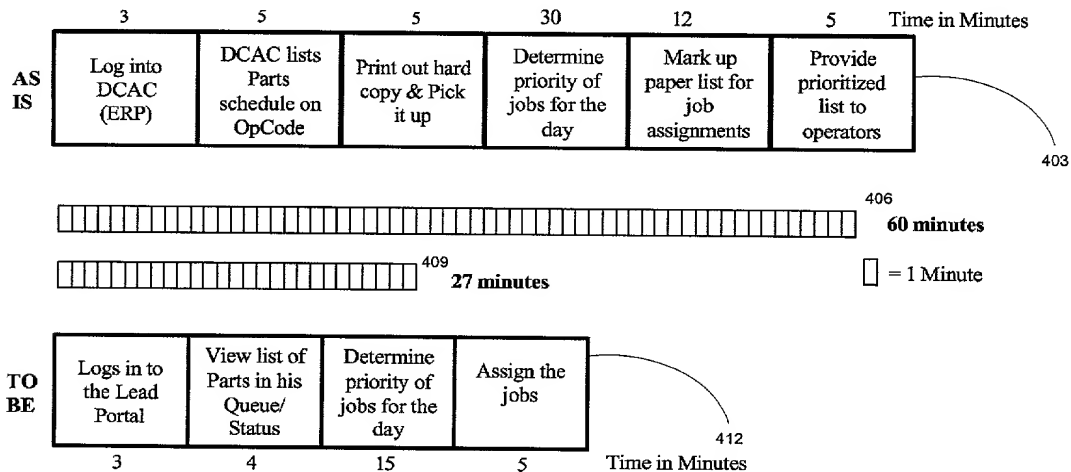


FIGURE 15B

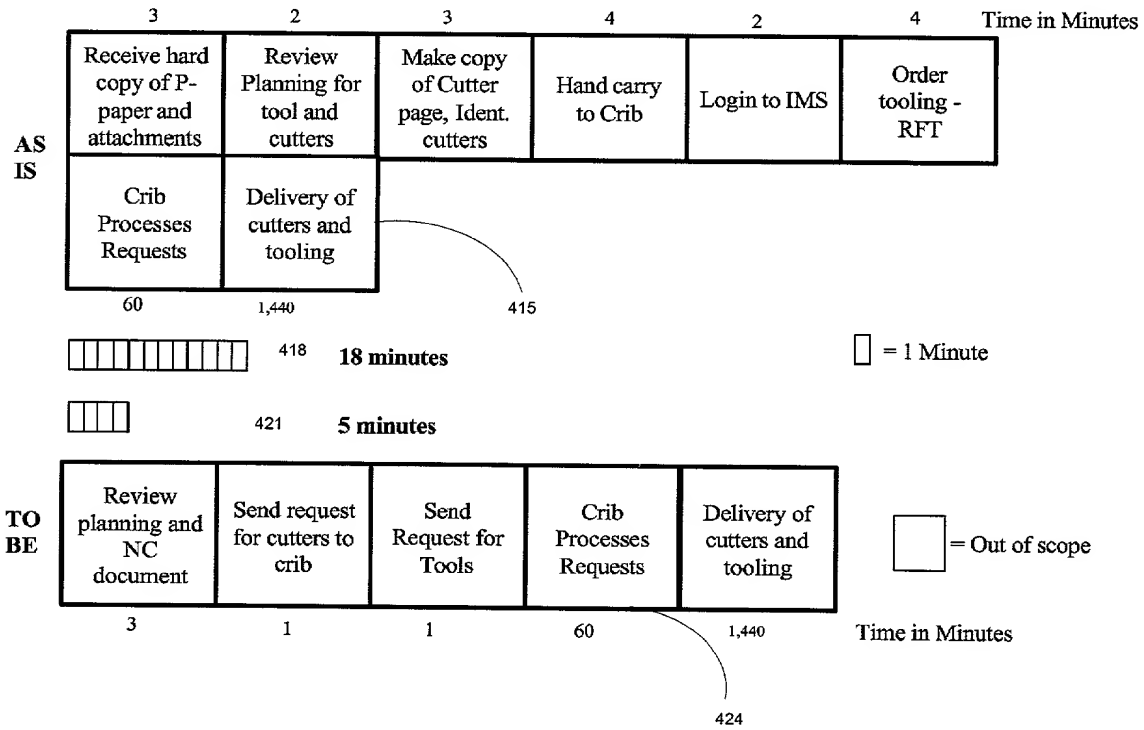


**the Machine shop lead (or manager) can save 33 minutes per shift per day on the machine load and assign job functions.**



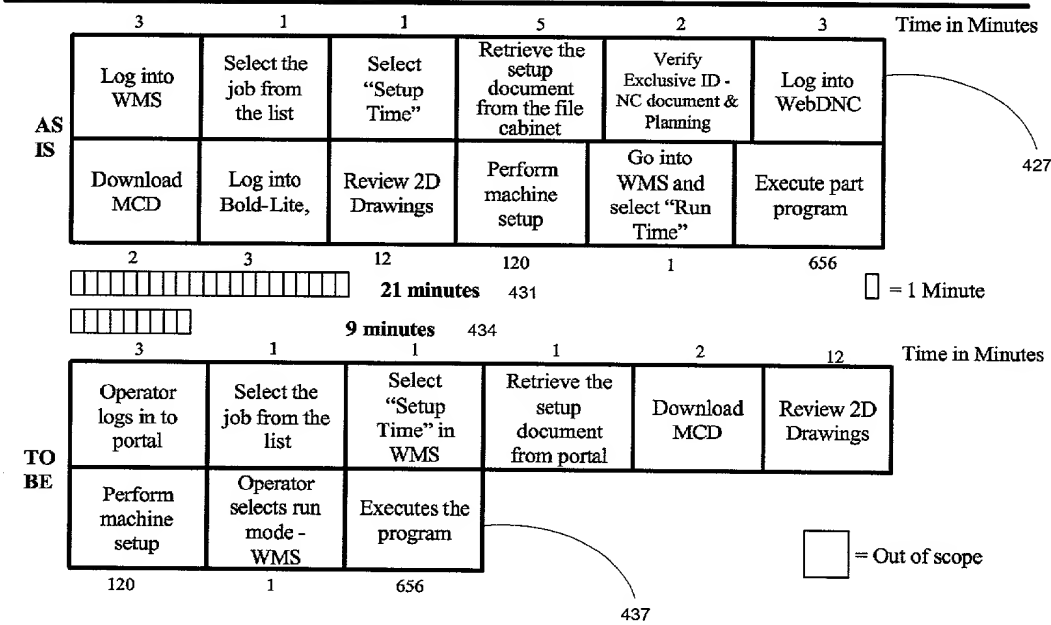
**FIGURE 16**

**the Machine shop  
 lead (or operator) can save 13 minutes per order with respect to  
 gathering data or tool information.**



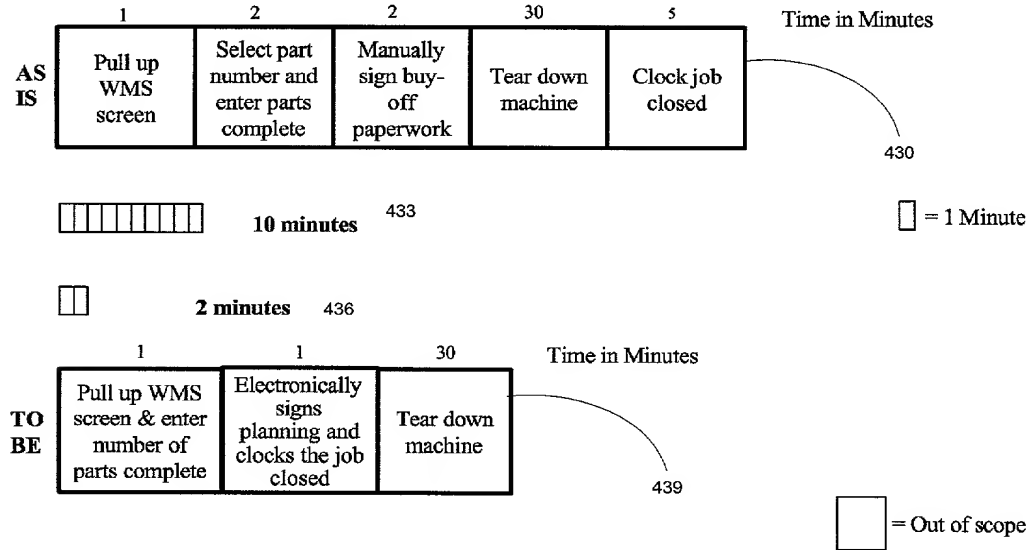
**FIGURE 17**

**the Machine Operator**  
**12 minutes, per order, on the NC machine part process.**



**FIGURE 18**

**The Machine shop operator / lead should also be able to save 8 minutes per order with the finish and close processes.**



**FIGURE 19**



Review the current process for producing a product cataloging all steps by all persons  
and all systems and machines

501

Group the steps in the process into redundant, repetitive,  
or including "human porting"

504

Optimize the steps in the process, to minimize "human-necessary" steps

507

Design software architecture to allow porting between "legacy software servers" and  
to browser.

510

Supplement the "raw" engineering data presented to the operator with recorded pictures  
of the process properly performed

513

Supplement the browsing interface with "real time"  
views of critical aspects of workpiece

516

Present operator with the resulting browser interface as a controlling means for  
production

519

FIGURE 21